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I am delighted to be here this afternoon. In particular because generally when people see the words RCRA and vision together, they think it is an oxymoron. So, we have really tried to step out of ourselves and our normal way of approaching life, and think about the future that it poses for us and a lot of you here in the room. So, I want to describe an effort that we have undertaken. We are in, I guess, sort of a middle phase. We are certainly not finished with it. We thought that this was a particularly good time for us and our partners in the States to look at where this country's waste program might be headed in the next 20 years or so. Also, what are the trends and influences that might influence the future shape of our program, and how we might possibly need to evolve in order to meet those challenges and opportunities. Because otherwise we might simply be considered irrelevant.

What we did was form a small workgroup of representatives from the Office of Solid Waste, a lot of participants from our partners in the states, and also our regional offices, particularly Region 9. We asked them to develop some ideas about RCRA's long-term future, and hence, the name of the project. Certainly one of the things that we first realized was that when it comes to talking about improving RCRA, those of us who do it for a living are really the ones least equipped to do it. It is very hard for us to step out of our program. So, we thought it was a good idea to hear from people who were not really truly connected with the RCRA program, or waste per se, but who really had been thinking about the future. We wanted different perspectives on where we were going that might have some relationship to the waste issues.

So, last September, we convened a roundtable of approximately a dozen experts who we thought would fill this bill and had credibility in their fields. This was a group composed of representatives from academia, industry, public interest groups, and government. One of them was Fred Hansen, our former Deputy Administrator, so it might give you an inkling of what was the true origin a couple of years ago of this project. But we asked him to join us and share his ideas about the role of government in the future. We all got a lot out of the meeting. It was a very impressive group, and it was very, very interesting.

The next step, was to put together what we term our draft white paper, and to put down in writing some of the ideas we gleaned from this roundtable of experts, and put our own gloss on it. People could see what we are talking about and have something to react to. We distributed this draft last month throughout EPA, as well as using our state partners to share it in the state agencies, and we also shared it with our tribal partners. Many of you may have seen it, and if you have

not, there are about 50 copies on that back table.

This short paper tries to forecast some of the trends and developments that we think may shape the future of the waste program, or whatever term or program name that we may have for it 20 years from now. It also offers some ideas as to some of the directions the program might take in light of these future trends, and suggests some tools that we might be able to better use to help us make the changes. But it is very much a blank slate exercise. We did not want to confine ourselves, which is what we normally do in some strategic planning exercises, to simply fixing and nibbling at the edges of the current program as we see it.

Again, we have got it in circulation now, we have been getting a lot of very good, very positive feedback in terms of the ideas and the concepts that we have put forward. Most of the suggestions that we have had have been expansionary in terms. But it is obvious that there are a lot of people, again among our partners in the agency and in the states and tribes, who have some very good ideas. We are trying to add to this paper before we go external, which is planned for early in the next calendar year, to deal with our external stakeholders. And ultimately we think it may inform some legislative initiatives, though we do not include any precise legislative initiatives here.

The paper groups some key trends and developments--six categories. I will go through each of these in turn.

Resources. Overtime, pressures in natural resources are probably going to continue to increase as the global population expands, as the global economy expands. Now, it is possible that over the next few decades that economic pressures and these new technologies may result in more efficiencies in the way that we use and the way that we waste our resources like the water, the energy, minerals, fibers. But as the planet's human population continues to grow, as the global economy creates more prosperity in different parts of the world, it is likely that we will need more and more of the basic resources that we extract, we use, and we throw away. All of these activities have environmental consequences. And it boils down to the issue at the bottom of the page, which is simply sustainability. How do we sustain economic growth without degrading the environment? And this is not just a waste issue. It is what resources are used and wasted, and how are wastes part of the big picture.

Health and Risk. The future will certainly bring us new chemicals, many of them from biotechnology, and probably a considerable number of new risks to go along with these new chemicals. We expect that we should also have a better understanding of the health and the ecological risks that these chemicals pose. We hope that we can be a lot smarter about cumulative and synergistic effects of

chemical exposures, risks to sensitive individuals, and other risk issues that we do not have good answers to today. But risk is considered to be more than simply the risk of the waste, but rather that entire life cycle risk of chemicals, again, as they are produced, used, reused, and then ultimately disposed of. As we learn more about chemicals in the environment, those who are affected will probably put more and more pressure on us in government as well as on industry to reduce the risks that they pose.

Changes in Industry. American industry, probably most countries' industry will certainly change a lot over the next couple of decades. New products are going to mean new wastes. Certainly we just heard about that in terms of electronics. Computers are a good example. We're going to have wastes that we probably haven't even imagined at this point. But what our hope is, is that new technologies are going to enable industry to use and reuse materials far more efficiently than they do now, and as a result, they will waste less.

This brings us to this **industrial ecology** concept that we have been talking about throughout today. It promotes the idea that industry can and should use and reuse materials in a continuous cycle. A number of companies have already adopted the idea. They are beginning to make it work. Unfortunately industry is still not as efficient as the natural systems are. So, we do expect that even 20 years from now, prudently we can expect that there will still be industrial wastes, and household wastes that we will still need to manage safely and wisely. The information revolution that we have been experiencing in the last 20 years is certainly expected to continue in the next few decades. No doubt it will have big effects on how wastes and materials are managed. The advancements could certainly have negative as well as positive impacts. For example, more information and better access to it could probably result in greater public awareness of environmental issues. I think we are already seeing that, and that's probably a good thing. And both of these trends together are going to require changes in the way government programs responds to the needs of the public.

Globablization. Very quickly, it is pretty clear the global economy will become more integrated over the next 20 years, and it is certainly an environmental issue as we have seen in the past year. Industries and wastes will probably become much more geographically dispersed, and again, it could have both good impacts and bad impacts on the environment. The main point is that we are going to need to develop more international approaches to maintaining environmental protections in waste management in the future.

Society and Government. Because of new technologies, particularly like the internet, it is likely that the future is going to see far stronger linkages between government and its public. This may lead to much greater empowerment of

individual citizens in influencing and making environmental decisions. More information and more citizen empowerment is also likely to mean that environmental justice, and the right to live in a clean environment, may become established as a simple and basic human right in this country.

So which direction should RCRA take? The paper does not really lay out a specific vision for what RCRA ought to look like in the next 20 years. We are trying to avoid pre-judging that. What we have done though is suggest how the fundamental goals of RCRA could be reworked and in some cases expanded along the lines of the three points here.

1. We want to go back to our origins, and remember what RCRA means, and put a greater premium on the term resource conservation. If we are going to waste fewer resources in the future, and we are going to achieve a sustainable economic system, we will need to really re-emphasize this goal. But we will need better tools, different tools from what we have been using. We have been primarily focusing on regulations so far. Minimizing waste generation both industrial and household, increasing recycling rates and generally getting more efficient in the way we use resources will probably involve using economic carrots and other tools instead of only the regulatory sticks that are usually employed.
2. Another issue is materials management, rather than continuing RCRA's current focus only on waste. The paper suggests that under a materials management system, only those materials that are clearly destined for disposal will be considered waste. And you might think of this as a retirement-to-grave system as an alternative to the normal RCRA cradle-to-grave system, and again, really laying out the need for new tools, new incentives, not just the same old regulations.
3. Chemical Risk Management. A broader materials management system will probably need to address risks from chemicals throughout their life cycle well before they would ever be considered wastes. We may need to combine and take a different perspective legislatively on one of those examples right up here, perhaps melding the lines between the RCRA and TSCA pieces of legislation. And again, new approaches particularly to better inform the public—risk labeling as a way of helping consumers make choices and make decisions that affect them is one alternative.

Again, we do not pretend that we will not have to worry about getting rid of wastes in the future. Safe management is still going to be something that we need to perform, and we are going to probably need a different design for our

program in order to perform those services better—making it far less complex, far less complicated, much more performance based than before. And again, this involves a lot more tools than we currently have in our box.

So, a few final thoughts. As a lot of people around the world are already sounding these alarm bells about achieving a more sustainable economic system that does not degrade the environment any more than it has done already. We will probably be hearing a lot more of this over the next few years. It is obviously a much bigger issue than just RCRA, but we want to be part of the thinking and part of the solution. We have narrowly focused on RCRA, but we think that in the future we have to take a much broader view, which is looking at chemical risks from start to finish, from extraction through production, through use and reuse, and into wastes. We want to build on the elements of a program that has worked successfully over the last 20 years, but we think this is a propitious time for starting to think about what the future may hold for us.

And finally, we are still taking comments, and we would like to encourage all of you here, if you have comments to share them with our office. But also think about the possibilities for your program to do something similar, again across the agency and with state partners, and possibly tribal implementers to think about how our programs need to change in the future.